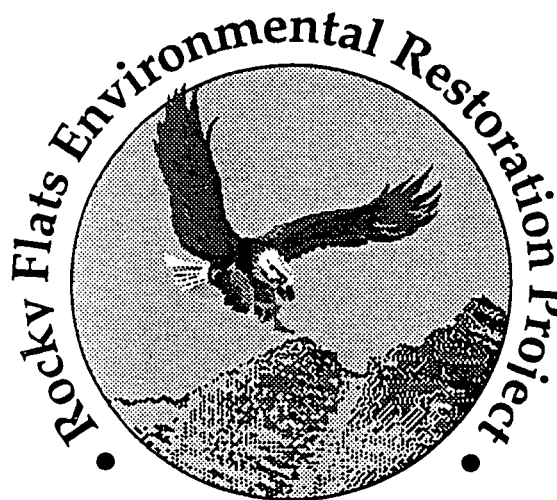


DOE-RFFO Environmental Restoration Program

Monthly Report
for June 1994



July 20, 1994

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE

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A-SW-001452

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EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR JUNE 1994

The Revised Operable Unit (OU) 1 Final Phase III Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Remedial Investigation (RI) Report was delivered to the regulatory agencies on June 15, 1994.

On June 10, 1994, the spring herbicide application to the Jefferson County Remedy Acreage was conducted in OU 3. The application will help control noxious weeds previously identified on the Remedy Acreage by Rocky Flats and Jefferson County personnel. A migratory bird survey and endangered plant and animal species survey were conducted at the remedy acreage. A before and after photographic documentation of the acreage was performed, and photographs of the herbicide application operations and equipment were taken.

The regulatory agencies are currently reviewing the following documents: (1) the Draft OU 4 Phase I RFI/RI Report, in conjunction with the OU 4 Interim Measure (IM)/IRA Decision Document; (2) the Post-Closure Performance Monitoring Plan (Sec. V of the IM/IRA Decision Document), in conjunction with the IM/IRA Decision Document; and (3) the OU 4 Phase II RFI/RI Work Plan. Comments from the regulatory agencies are due in July 1994.

Options are being investigated to streamline the execution of the RFI/RI for Phase II remediation of OU 4. Currently, the most feasible option appears to be concurrent execution of both a subsurface investigation and the Corrective Measures Study/Feasibility Study (CMS/FS). This approach is warranted because significant data relating to chemistry and contamination of the groundwater have already been obtained from existing wells at the site. Information concerning the site's hydrogeology would be obtained through the planned RFI/RI field work and would be supplied to the CMS/FS in time to support the conclusion of the study. An additional target of streamlining is the development of a combined proposed plan and corrective action decision/final action decision deliverable. The administrative process could be shortened by approximately two years.

The 964 laydown yard [Individual Hazardous Substance Site (IHSS) 176] material removal project in OU 10 is under way. It is anticipated that all of the material that is stored on the east side of the IHSS can be removed by the end of August 1994.

DOE discussed a revised Interagency Agreement (IAG) milestone schedule for OU 11. The proposed schedule will combine Phase I and II RFI/RI milestones and eliminate the IM/IRA, the Corrective Action Decision/Record of Decision, and the Corrective Action/Final Action milestones. The combined Phase I and II RFI/RI milestones will be completed by March 1997 instead of the current IAG milestone date of May 2001.

A Pond Water IM/IRA meeting attended by the regulatory agencies, the Cities of Westminster and Broomfield, and DOE was held on June 8, 1994, to demonstrate the significant improvements in spill control, water management, and ecological programs since the 1989 chromic acid incident.

IAG PERFORMANCE INDICATORS FOR MONTHLY REPORT

<u>Number of IAG Table Six Milestones to Date</u>	<u>(10/1/93 - 9/30/94)</u>	<u>Current FY94 Since IAG Inception</u>
Scheduled (including approved extensions)	20	117
Met	6	94
Extensions Granted	8	35
Extensions Denied	6	8
Remaining this FY94 (to 9/30/94)	15	n/a
Added	0	5
Deleted	1	4

<u>Deliverables in Review by Regulators</u>	<u>Project</u>	<u>Date Submitted</u>
	Revisions to OU 1 Phase III RFI/RI	15 Jun 94
	OU 2 Draft Phase II RFI/RI Report	16 Dec 93
	OU 4 Draft Proposed Phase I IM/IRA Decision Document	27 May 94
	OU 4 Draft Proposed Phase I RFI/RI Work Plan	27 May 94

<u>Field Work Currently Under Way</u>	<u>Project</u>	<u>Scheduled Complete</u>
Please note: these dates reflect scheduled field work and completed field work.	OU 2	08 Oct 93
	OU 3	13 Jul 93
	OU 4	Jun 95 ^a
	OU 5	Oct 94 ^a
	OU 6	30 Jun 94
	OU 8	28 Feb 95
	OU 9	Jun 95
	OU 10	15 Aug 94
	OU 12	05 Sep 94
	OU 13	06 10 96
	OU 14	25 Oct 96
	OU 15	24 June 94

^a for field work Phases I and II

<u>IM/IRA Status</u>	<u>Gallons Treated</u>
OU 1 881 Hillside Treatment	2,469,509 gallons
OU 2 903 Pad Water Treatment	24,751,060 gallons
OU 4 Water Management Tasks (ITS and Pond Water)	916,000 gallons

<u>IAG Document Deliverables Due Next 6 months</u>	<u>Due Date</u>	<u>Expected Date</u>
OU 1 Draft CMS/FS Report	25 Aug 94	25 Aug 94
OU 1 Corrective Action Decision Record of Decision Work Plan	01 Nov 94	12 Sep 97
OU 1 Draft Proposed Plan	11 Nov 94	22 Nov 94
OU 1 Final CMS/FS Report	22 Nov 94	22 Nov 94
OU 2 Final Proposed Plan	09 Aug 94	23 Apr 97*
OU 2 Draft Responsiveness Summary	13 Dec 94	26 Mar 97
OU 3 Final Phase I RFI/RI Report	21 Oct 94	18 Jul 95
OU 4 Final Phase I Proposed IM/IRA Decision Document	06 Aug 94	06 Aug 94
OU 4 Final Phase II RFI/RI Work Plan	06 Aug 94	12 Jul 94
OU 6 Final Phase I RFI/RI Report	18 Nov 94	20 Nov 95

IAG Document Deliverables Due Next 6 months

	<u>Due Date</u>	<u>Expected Date</u>
OU 7 Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94	03 May 95
OU 8 Final Phase I RF/RI Report	12 Jul 94	10 Feb 98
OU 9 Final Phase I RF/RI Report	06 Sep 94	10 Sep 98
OU 10 Draft Phase I RF/RI Report	25 Aug 94	11 Feb 15
OU 11 Draft Phase I RF/RI	20 Sep 94	18 Apr 95
OU 12 Final Phase I RF/RI Report	15 Sep 94	17 Nov 99
OU 13 Draft Phase I RF/RI Report	08 Aug 94	24 Mar 99
OU 15 Draft Phase I RF/RI Report	01 Aug 94	01 Aug 94
SW Industrial Area Draft Responsiveness Summary	02 Aug 94	02 Aug 94
SW Industrial Area Final Responsiveness Summary	23 Aug 94	23 Aug 94
SW Industrial Area Final Decision Document	23 Aug 94	23 Aug 94

Overdue Deliverables

	<u>Due Date</u>	<u>Expected Date</u>
OU 2 Draft Proposed Plan	10 May 94	27 Jan 97*
OU 2 Final CMS/FS Report	10 May 94	27 Jan 97*
OU 2 Draft Phase II RF/RI Report ^a	12 Mar 93	16 Dec 93*
OU 2 Final Phase II RF/RI Report	09 Aug 93	23 May 94*
OU 2 Draft CMS/FS Report	04 Nov 93	17 Oct 96*
OU 3 Draft Phase I RF/RI Report	14 Feb 94	31 Oct 94*
OU 5 Draft Phase I RF/RI Report	30 Nov 93	09 Feb 95*
OU 5 Final Phase I RF/RI Report	03 May 94	14 Nov 95*
OU 6 Draft Phase I RF/RI Report	10 Jun 94	19 Apr 95*
OU 7 Final Phase I RF/RI Report	16 Mar 94	02 Sep 94*
OU 8 Draft Phase I RF/RI Report	14 Feb 94	02 Nov 15
OU 9 Draft Phase I RF/RI Report	11 Apr 94	15 Jun 98
OU 12 Draft Phase I RF/RI Report	20 Apr 94	11 Mar 99

* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

^a Partial delivery because of the Human Health Risk Assessment stop work order.

PROBLEMS AND PROGRAMMATIC ISSUES

The EPA and CDH may request a 30-day public review and comment period of the OU 1 Sampling and Analysis Plan before removal activities can begin. Formal comments from the regulatory agencies are pending. The 30-day public review and comment period will cause the scheduled hot spot cleanup start date to be delayed from July 12, 1994, to September 19, 1994. In addition, this delay could affect the November 22, 1994, IAG milestone for the FS. The new completion date for the Removal Report is estimated to be February 8, 1995. The hot spot removal plans were presented at the Quarterly Public Meeting on June 22, 1994.

Hot spot removal delays in OU 1 could adversely impact the scheduled completion of the CMS/FS study IAG milestones.

The milestone for the OU 9 Draft Phase I RFI/RI Report due April 11, 1994, has been missed. CDH has denied a request for an extension for both the OU 9 Draft and Final Phase I RFI/RI Report in a letter dated April 14, 1994. CDH also indicated that missing the milestone violates the IAG and that starting from the date DOE received the notice, penalties will be assessed. DOE is actively negotiating this issue with the regulatory agencies, but final agreement has not been reached.

The comments on the Draft Record of Decision for OU 16 due from CDH and EPA on June 10, 1994, are delinquent. A milestone on June 30, 1994, for the finalized Record of Decision will be jeopardized for each day the comments remain delinquent.

The IAG milestones for the Industrial Area (IA) IM/IRA Plan will be missed because of the increase in scope. The regulatory agencies have indicated that an extension is appropriate and should be granted. A letter requesting an extension on this milestone is being composed.

NEAR-TERM IAG TABLE SIX MILESTONES

<u>OU#</u>	<u>IAG</u> <u>Milestone Description</u>	<u>Date Scheduled</u> <u>to EPA/CDH</u>	<u>Status</u>
2 ^a	Submit Draft Phase II RF/RI Report	12 Mar 93	Extension denied (delinquent)
2 ^a	Submit Final Phase II RF/RI Report	9 Aug 93	Extension denied (delinquent)
2 ^a	Submit Draft CMS/FS Report	04 Nov 93	Extension request submitted. Past due
5 ^a	Submit Draft Phase I RF/RI Report	30 Nov 93	Extension request submitted. Past due
3 ^a	Submit Draft Phase I RF/RI Report	14 Feb 94	Extended from 16 Jul 93. Past due
8	Submit Draft Phase I RF/RI Report	14 Feb 94	Extension denied (Notice of Violation issued)
9	Submit Draft Phase I RF/RI Report	11 Apr 94	Extension request denied. Past due
12	Submit Draft Phase I RF/RI Report	20 Apr 94	Extension request denied. Past due
5 ^a	Submit Final Phase I RF/RI Report	03 May 94	Extension request submitted. Past due
2 ^a	Submit Final CMS/FS Report	10 May 94	Extension request submitted. Past due
2 ^a	Submit Draft Proposed Plan	10 May 94	Extension request submitted. Past due
4	Submit IM Design Work Plan	24 May 95	Deleted
9	Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95	Proposed Elimination
10	Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95	Proposed Elimination
14	Submit Final Phase I RF/RI Report	23 May 95	29 Sep 97
6 ^a	Submit Draft Phase I RF/RI Report	10 Jun 94	Extended from 04 Aug 93
4	Submit Final Phase II RF/RI Work Plan	06 Aug 94	On schedule
8	Submit Final Phase I RF/RI Report	12 Jul 94	Extension request denied
15	Submit Draft Phase I RF/RI Report	01 Aug 94	On schedule
SW	Submit Industrial Area Draft Responsiveness Summary	02 Aug 94	02 Aug 94
4	Submit Final Phase I Proposed IM/IRA Decision Document	06 Aug 94	On schedule
13	Submit Draft Phase I RF/RI Report	08 Aug 94	24 Mar 99
2 ^a	Submit Final Proposed Plan	09 Aug 94	Extension request submitted
SW	Submit Industrial Area Final Responsiveness Summary	23 Aug 94	On schedule
SW	Submit Industrial Area Final Decision Document	23 Aug 94	On schedule
10	Submit Draft Phase I RF/RI Report	25 Aug 94	Extension request submitted
1	Submit Draft CMS/FS Report	25 Aug 94	Extended from 11 Feb 94
9	Submit Final Phase I RF/RI Report	06 Sep 94	Extension request denied
12	Submit Final Phase I RF/RI Report	15 Sep 94	Extension request denied
11	Submit Draft Phase I RF/RI Report	20 Sep 94	19 May 95
3 ^a	Submit Final Phase I RF/RI Report	21 Oct 94	Extended from 13 Dec 93
1	Submit CD/RD Work Plan	01 Nov 94	12 Sep 97
7 ^a	Submit Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94	03 May 95
6 ^a	Submit Final Phase I RF/RI Report	18 Nov 94	Extended from 07 Jan 94
1	Submit Draft Proposed Plan	22 Nov 94	Extended from 27 Sep 93
1	Submit Final CMS/FS Report	22 Nov 94	Extended from 27 Sep 93
2 ^a	Submit Draft Responsiveness Summary	13 Dec 94	26 Mar 97
4	IM/IRA Responsiveness Summary	14 Dec 94	14 Dec 94
14	Submit Draft Phase I RF/RI Report	20 Dec 94	23 Apr 97
15	Final Phase I RF/RI Report	04 Jan 95	On schedule
13	Final Phase I RF/RI Report	11 Jan 95	02 Dec 99

<u>OU#</u>	<u>IAG</u> <u>Milestone Description</u>	<u>Date Scheduled</u> <u>to EPA/CDH</u>	<u>Status</u>
4	All Solar Ponds Emptied of Water and Sludge	20 Jan 95	Ahead of schedule
10	Final Phase I RFI/RI Report	30 Jan 95	Extension request submitted
4	Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	24 Feb 95	13 Jan 95
7	Final Phase II RFI/RI Work Plan	15 Feb 95	*
11	Final Phase I RFI/RI Report	22 Feb 95	03 Jan 96
1	Submit Final Proposed Plan	24 Feb 95	Extended from 04 Jan 94
9	Submit Draft Phase II RFI/RI Work Plan	10 Mar 95	10 Sep 98
2	Submit Final Responsiveness Summary	16 Mar 95	17 Nov 97
2	Submit Draft CAD/ROD	16 Mar 95	17 Feb 97
7	Final Phase I Proposed IM/IRA Decision Document	06 Apr 95	03 Jul 95

* Behind original IAG schedule; extension required.

^a OUs 2, 3, 5, and 6 will request additional extensions because of the Human Health Risk Assessment stop work order.

SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for June 1994. This program implements the Interagency Agreement (IAG) among the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Plant near Golden, Colorado. This agreement was signed on January 22, 1991. The work is being performed for DOE by EG&G Rocky Flats, Inc.

The Executive Summary of the report highlights significant achievements, summarizes milestone information, and presents any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU) as well as other program activities are presented in Section 2. Section 3 contains the schedules for routine environmental sampling as required by Paragraph 210 of the IAG. Section 4 contains a list that identifies the subcontractors performing work on the program as required by Paragraph 13 of the IAG.

SECTION 2. PROJECT STATUS

2.1 OU 1 - 881 HILLSIDE AREA

The alluvial groundwater at the 881 Hillside Area, located north of Woman Creek in the southeast section of Rocky Flats, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately two miles from the eastern, outer edge of the plant's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSSs) that make up OU 1 were being investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface groundwater and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface groundwater flowing from the OU 1 area. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and released onsite into the South Interceptor Ditch along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. IRA construction was completed in April 1992. The Remedial Investigation (RI) and Feasibility Study (FS) to determine the final remedial action are continuing in parallel with operation of the IRA.

2.1.1 OU 1 ASSESSMENT

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
	Submit Final Phase III RFI/RI Work Plan	31 Oct 90
	Submit Draft Phase III RFI/RI Report	28 Oct 92
	Submit Final Phase III RFI/RI Report	05 Nov 93
	Submit Revised Phase III RFI/RI Report	15 Jun 94

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft CMS/FS Report	25 Aug 94	25 Aug 94	25 Aug 94
Submit Final CMS/FS Report	22 Nov 94	22 Nov 94	22 Nov 94
Submit Draft Proposed Plan	27 Sep 93	22 Nov 94	07 Mar 95
Submit Final Proposed Plan	04 Jan 94	24 Feb 95	02 Jun 95
Submit Draft Responsiveness Summary	23 Jun 95	23 Jun 95	01 Nov 95
Submit Final Responsiveness Summary	22 Sep 95	22 Sep 95	15 Feb 96

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Corrective Action Decision/ Record of Decision	22 Sep 95	22 Sep 95	15 Feb 96
Submit Final Corrective Action Decision/ Record of Decision	22 Dec 95	22 Dec 95	29 Apr 96
Submit Draft Title II Design	05 Jul 95		11 Nov 96

June Work Activity Status

Remedial Investigation - The Revised Final RCRA Facility Investigation (RFI/RI) Report was delivered to the regulatory agencies on June 15, 1994. The EPA and CDH are reviewing the document for final approval.

Corrective Measures Study (CMS)/Feasibility Study (FS) - Work on the groundwater modeling and refining of alternative designs is on schedule. To meet the IAG milestone dates for the CMS/FS, several activities must be overlapped. Completion as scheduled of the IAG milestone dates may be complicated by the addition of unanticipated public review and comment period requirements added to the accelerated cleanup.

Technical Memoranda**Project****OU 1 - 881 Hillside**

TM #10
TM Title
TM Status

Preliminary Remediation Goals
Submitted Final TM to EPA/CDH: 03 May 94
When preparation was concluded: 03 May 94
Projected date of submittal to EPA/CDH: 03 May 94
Actual date of submittal: 03 May 94
Date comments were received: To be determined

TM #11
TM Title
TM Status

Alternative Array
Submitted Draft TM to DOE: 03 May 94
When preparation was concluded: 03 May 94
Projected date of submittal to EPA/CDH: 03 May 94
Actual date of submittal: 03 May 94
Date comments were received: To be determined

Planned Work for July	<ul style="list-style-type: none">• Continue work on the Draft CMS/FS. The groundwater modeling and refining of alternatives designs are on schedule.• Continue work on the Draft CMS/FS.
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Problems	None
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Open Items	None
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2.1.2 OU 1 REMEDIATION

Scope of Work Changes This Period	None
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Technical Approach Changes This Period	The Accelerated Cleanup Team has begun the process to clean up OU 1 Radiation hot spots. This accelerated cleanup will result in the streamlining of the CMS/FS process.
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IAG Milestone Accomplishments	Submit Draft Proposed IM/IRA Decision Document	18 Sep 89
	Submit Proposed IM/IRA Decision Document	06 Oct 89
	Submit Final IM/IRA Decision Document	05 Jan 90
	Begin Phase I-A IM/IRA Construction	15 Jan 90
	Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
	Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
	Submit IM/IRA Implementation Document	22 Feb 91
	Begin Phase II-A IM/IRA Construction	01 Apr 91
	Begin IM/IRA Testing	05 Aug 91
	Begin Phase II-B IM/IRA Construction	03 Sep 91
	Complete IM/IRA Construction (891 treatment facility)	02 Mar 92
	Complete IM/IRA Construction (French drain)	13 Apr 92

Future IAG Milestones Through FY95	None
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June Work Activity Status	Accelerated Cleanup - DOE has requested a 30-day public review and comment period of the Proposed Action Memorandum before beginning removal activities.
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Formal comments from the regulatory agencies are pending. The 30-day public review and comment period will cause the scheduled hot spot cleanup start date to be delayed from July 1994 to September 1994. The hot spot removal plans were presented at the Quarterly ER Public Information Meeting on June 22, 1994.

Interim Measure (IM)/Interim Remedial Action Treatment Facility - Repairs to the groundwater collection well were completed on June 17, 1994. The well was pumped dry and sampled after repairs were completed.

The fund allocated for the Building 891 infrastructure replacement must be used in Fiscal Year 1994 (FY94). The funding became available in June 1994 after it was approved by the Rocky Flats Plant Change Control Board. EG&G is awaiting a Davis-Bacon determination.

The decision of the regulatory agencies on the proposal to stop treating Building 881 footing drain water is still pending.

Treated groundwater this month: 34,454 gallons
Total treated to date: 2,469,609 gallons

Planned Work for July

- Normal Operations

Problems

None

Open Items

None

2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time and allowed hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent; these areas may have contaminants that were not removed by the treatment system.

Originally, the IM/Interim Remedial Action (IRA) collected seep and surface water contamination sources, then treated and discharged the effluent to the surface water drainage. Operation of the field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process was evaluated at three locations: the influent to the treatment facility, several points within the facility, and the discharge point. Approval was granted to discontinue collection of two of the three sources because the water met the standards established. Collection of the last source is also being reevaluated.

A second IM/IRA was established in late 1991. This Subsurface IM/IRA Plan/Environmental Assessment encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRA describes the process to evaluate a remediation technology for removal of residual free-phase volatile organic compound contamination at OU 2. The volatile organic compound removal actions involve *in situ* vacuum-enhanced vapor extraction technology. The interim remedial action will provide information to aid in the selection and design of final remedial actions that address subsurface, residual free-phase volatile organic compound contamination at OU 2.

2.2.1 OU 2 ASSESSMENT

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestones Accomplishments	Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
	Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
	Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
	Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91
	Submit Field Report for Detailed Soil Vapor Survey	15 Dec 93
	Submit Preliminary Draft Phase II RFI/RI Report	16 Dec 93

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase II RFI/RI Report	12 Mar 93	Denied	03 May 95*
Submit Final Phase II RFI/RI Report	09 Aug 93	Denied	11 Jun 96*
Submit Draft CMS/FS Report	04 Nov 93		26 Aug 96*
Submit Final CMS/FS Report	10 May 94		27 Jan 97*
Submit Draft Proposed Plan	10 May 94		27 Jan 97 *
Submit Final Proposed Plan	09 Aug 94		23 Apr 97*
Submit Draft Corrective Action Decision/ Record of Decision	16 Mar 95		05 Jan 98*
Submit Final Responsive Summary	16 Mar 95		05 Jan 98*
Submit Final Corrective Action Decision/ Record of Decision	15 Jun 95		01 Apr 98*
Submit Record of Decision/ Record of Decision Work Plan	15 Jun 95		01 Apr 98*

* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

**June Work Activity
Status**

Remedial Assessment - The OU 2 RI is undergoing a review. The schedule will then be submitted to the regulatory agencies by July 8, 1994.

Feasibility Study - Preparation of Technical Memorandum (TM) #1 and TM #2 of the FS for OU 2 is continuing. TM #1 addressed Preliminary Remediation Goals for OU 2 while TM #2 addresses the preliminary list of remedial alternatives for OU 2. OU 2 Preliminary Remediation Goals have been completed, and screening of technologies has been initiated.

Technical Memoranda**Project****OU 2 - 903 Pad, Mound, and East Trenches****TM #5****TM Title****TM Status**

Exposure Scenarios

When preparation was concluded: 15 Jan 93

Projected date of submittal to EPA/CDH: 15 Jan 93

Actual date of submittal: 15 Jan 93

Date comments were received: 11 Feb 93 EPA,

12 Mar 93 CDH

TM #6**TM Title****TM Status**

Modeling

When preparation was concluded: 15 Jan 93

Projected date of submittal to EPA/CDH: 15 Jan 93

Actual date of submittal: 15 Jan 93
Date comments were received: 01 Apr 93 EPA,
31 Mar 93 CDH

TM #7
TM Title
TM Status

Surficial Soils
When preparation was concluded: 07 Jan 93
Projected date of submittal to EPA/CDH: 07 Jan 93
Actual date of submittal: 12 Jan 93
Date comments were received: 21 Jan 93
TM Approved

TM #8
TM Title
TM Status

Bedrock
When preparation was concluded: 15 Mar 93
Projected date of submittal to EPA/CDH: 01 Mar 93
Actual date of submittal: 15 Mar 93
Date comments were received: 14 Apr 93 EPA,
14 Apr 93 CDH
TM Approved

TM #8 Addendum
TM Title

TM Status

Contingency Plan for revised Phase II RFI/RI Work Plan
(Bedrock)
When preparation was concluded: Jun 93
Projected date of submittal to EPA/CDH: Jun 93
Actual date of submittal: Jun 93
Date comments were received: FY93

TM #9
TM Title
TM Status

Chemicals of Concern
When preparation is concluded: 24 Aug 93
Projected date of submittal to EPA/CDH: Unknown due
to work stoppage
Actual date of submittal: 08 Dec 93
Date comments were received: 14 Jan 94
Projected date of resubmittal to EPA/CDH: 30 Aug 94

TM #10
TM Title
TM Status

Toxicity Assessment
When preparation was concluded: 24 Aug 93
Projected date of submittal to EPA/CDH: 30 Aug 94
Actual date of submittal: 30 Aug 94
Date when comments are received: To be determined

Planned Work for June

- Continue work on the Risk Assessment Treatability Studies and FS.

Problems

None

Open Items

None

2.2.2 OU 2 REMEDIATION

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
	Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
	Submit Draft Responsiveness Summary	13 Dec 90
	Submit Final Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91
	Field Treatability Test System Installation Complete	10 May 91
	Begin Field Treatability Testing (Carbon System)	03 May 91
	Submit Draft Treatability Test Report (Phase I Granular Activated Carbon)	01 Apr 92
	Complete IM/IRA Construction (radionuclides removal system)	24 Apr 92
	Begin Field Treatability Testing (radionuclides removal system)	27 Apr 92
	Submit Final Treatability Test Report (Phase I Granular Activated Carbon)	02 Jun 92
	Submit Subsurface Site I Draft Test Plan	29 Oct 92
	Submit Subsurface Site I Final Test Plan	12 Jan 93
	Submit Draft Surface Water Field Treatability Report	13 Jul 93
	Submit Subsurface Site 2 Draft Test Plan	6 July 94
	Submit Final Phase II Treatability Study Report	26 Jan 94
	Begin Subsurface IM/IRA Test I	14 Feb 94

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Final Pilot Test Plan Site II	30 Aug 94		30 Aug 94
Submit Final Pilot Test Report Site I	27 Oct 94		08 Nov 94
Submit Draft Final Pilot Test Report	28 Oct 94		28 Oct 94
Submit Responsiveness Summary	13 Dec 94		23 Sep 97*
Submit Final Pilot Test Report	20 Dec 94		20 Dec 94
Submit Final Pilot Test Report Site II	01 Sep 95		01 Sep 95
Submit Final Pilot Test Report Site III	23 Apr 96		23 Apr 96

* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

**June Work Activity
Status**

Subsurface Interim Measure/Interim Remedial Action Operations Report - Test Site No. 1 - Soil-gas rates were extracted from the subsurface. The vapors being removed are composed of approximately 50 percent polychlorinated biphenyls, 30 to 40 percent carbon tetrachloride, and 10 to 20 percent other organics. A total of 284 pounds of volatile organic compounds has been extracted.

The Sustained Operations Program, a 24-hour a day, 7-day a week schedule, has been completed. Sustained operations were performed on the Alluvial Well 1: one gallon of water a day is being produced from that well. Soil Vapor Extraction maintenance is being performed on the pilot plant prior to the post-pilot operations.

TM #2, which evaluates off-gas treatment alternatives for treatment of extracted soil gas from Individual Hazardous Substance Site (IHSS) 110, was issued as a controlled document to the regulatory agencies in May 1994. The EPA approved the TM without comment; comments from CDH were received and responses are being processed.

Surface Water Interim Measure/Interim Remedial Action - All used carbon will be regenerated and not stored as a RCRA-regulated waste. A schedule was submitted to the CDH on June 10, 1994, to ship carbon offsite for reactivation.

The CDH performed an inspection of the EM-1890 RCRA 90-Day Storage Area at the OU 2 IM/IRA on June 1, 1994.

Treated surface water this month: 1,439,200 gallons
Total treated to date: 24,751,060 gallons

Planned Work for June

- Continue Field Treatability Unit operations of treating SW-59 and Soil Vapor Extraction water.
- Continue Soil Vapor Extraction Site 1 post-pilot operations.

Problems

None

Open Items

None

2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This involves assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U.S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

**Scope of Work Changes
This Period** None

**Technical Approach
Changes This Period** None

IAG Milestones Accomplishments	Submit Draft Past Remedy Report	26 Oct 90
	Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
	Submit Final Past Remedy Report	02 Apr 91
	Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
	Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
	Submit Final Phase I RFI/RI Work Plan	06 Dec 91

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	16 Jul 93	14 Feb 94	14 Feb 94*
Submit Final Phase I RFI/RI Report	21 Oct 94		18 Jul 95*

* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

June Work Activity Status

The regulatory agencies, DOE, and EG&G met to discuss the analysis phase of the OU 3 Environmental Evaluation. An approach was developed that included plans to conduct a cursory ecological assessment and a more comprehensive exposure assessment. The EPA prefers a

more comprehensive ecological assessment and recommends the need for an exposure assessment to be determined based on the results of the ecological assessment. A letter to the EPA which clarifies the new approach and requests EPA's consensus and written approval to implement the new approach has been drafted.

A site walk and meeting were held on June 2, 1994, with the City of Westminster to obtain final authorization for the air and meteorological monitoring station proposed location. The City of Westminster approved the proposed station location.

A meeting was held with the Jefferson County Planning and Zoning Department concerning construction permits for two of four air and meteorological monitoring station locations proposed in the vicinity of Standley Lake. Results of the meeting indicate that under the Land Use Agreement of May 1992, and current applicable County Planning Department ordinances, a site-approval application must be submitted to the County by DOE. Once the applications are approved by the County, construction permits for both proposed station locations will be issued.

On June 10, 1994, the spring herbicide application to the Jefferson County Remedy Acreage was conducted. The application will help control noxious weeds previously identified on the Remedy Acreage by Rocky Flats and Jefferson County personnel. A migratory bird survey and endangered plant and animal species survey were conducted by the Ecology and National Environmental Policy Act Division at the remedy acreage. Photographs of the herbicide application operations and equipment were taken on June 10, 1994.

The Landowner Information Letters for the OU 3 Soil Sampling Program have been prepared and are in final review. The landowner information package includes a letter that explains the sampling program, an information sheet discussing the types of radiation sources, and sampling results for the respective soil plot as compared to background.

Technical Memoranda

Project

OU 3 - Offsite Areas

TM #1

TM Title

TM Status

Field Changes to the RFI/RI Work Plan

When preparation was concluded: 10 May 93

Projected date of submittal to EPA/CDH: 10 May 93

Actual date of submittal: 23 Apr 93

Date comments were received: 05 Jan 94

TM #2

TM Title

TM Status

Exposure Scenarios for the Human Health Risk Assessment

When preparation was concluded: 12 May 93

Projected date of submittal to EPA/CDH: 12 May 93

Actual date of submittal: 03 May 93

Date comments were received: 15 Jul 93

TM #3

TM Title

TM Status

Modeling

When preparation is concluded or is estimated to be concluded: Sep 94

Projected date of submittal to EPA/CDH: Sep 94

Actual date of submittal: To be determined

Date comments are received: To be determined

TM #4

TM Title

TM Status

Contaminants of Concern

When preparation is concluded or is estimated to be concluded: Aug 94

Projected date of submittal to EPA/CDH: Aug 94

Actual date of submittal: To be determined

Date comments are received: To be determined

Currently under a work stoppage

TM #5

TM Title

TM Status

Toxicity

When preparation is concluded or is estimated to be concluded: Aug 94

Projected date of submittal to EPA/CDH: Aug 94

Actual date of submittal: To be determined

Date when comments are received: To be determined

Currently under a work stoppage

Planned Work for July

- Prepare revised project schedule.
- Select Human Health Risk Assessment Contaminants of Concern and develop Contaminants of Concern TM.
- Continue work on TM #5, *Toxicity*.
- Send remaining Wind Tunnel samples for analysis.

Problems

None

Open Items

The post stop work order schedule extension request for OU 3 has not been fully accepted by the regulatory agencies.

2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 is comprised of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and groundwater was suspected. Interceptor trenches were installed in 1971 to collect and recycle contaminated groundwater to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were upgraded by the current, larger interceptor trench system, which returned approximately 4 million gallons of groundwater back into the solar evaporation ponds each year.

Process water has not been pumped into the ponds since 1986, and with the diversion of the Interceptor Trench System water to storage tanks in April 1993, groundwater is no longer returned to the ponds. This placement of water into the ponds had been occurring without meeting Land Disposal Restrictions and Minimum Technology Requirements of RCRA. A new, dedicated Building 910 evaporation-treatment facility became operational in July 1993. This building supplements the plant's waste treatment facility in Building 374 to process the water stored in the modular tanks. Because upgrades were installed in Building 374 and since other plant waste streams decreased in volume, Interceptor Trench System water is now preferentially treated in Building 374 rather than Building 910.

The Solar Evaporation Ponds Subproject is comprised of four technical areas: (1) remix of non-certified pondcrete and saltcrete and pond sludge processing by means of the Agreement in Principle between DOE, CDH, and the Federal Facility Compliance Agreement; (2) water management/treatment by means of the IM/IRA Decision Document signed by EPA, CDH, and DOE; (3) the OU 4 assessment and remedial action, per the IAG which identified the ponds as one of the 16 OUs to be remediated at Rocky Flats and superseded the 1988 Ponds Closure Plan submitted by DOE to the regulators; and (4) pad operations, storage, and disposal activities that are necessary to meet the plant's RCRA interim status and permit requirements for storage of pond wastes. The water management and pond sludge clean-out are necessary precursors to OU 4 assessment and remediation, and pad operations are necessary support activities at least until the pond sludge waste is processed and disposed. Revisions to scope in these areas are being implemented in accordance with the dispute resolution for OU 4.

Work in these four areas was planned to close the ponds and remediate OU 4. The work was scoped to (1) remove water from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related contaminated groundwater, (3) remove and dispose of pond sludge in compliance with all regulations such as the Land Disposal Restrictions of RCRA, (4) assess the nature and extent of contamination at the ponds, (5) complete a RCRA closure of the impoundments, and (6) remediate the ponds as needed.

2.4.1 OU 4 ASSESSMENT**Scope of Work Changes
This Period**

As outlined in the future milestone section, project Work Plans have been revised to incorporate the results of the OU 4 dispute resolution. Budget changes to implement the revised scope were submitted to DOE/Headquarters. While awaiting DOE/Headquarter's approval of the budget changes, the DOE Rocky Flats Field Office is proceeding with the scope that has been funded under these changes.

**Technical Approach
Changes This Period**

None

**IAG Milestone
Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	26 Nov 90
Submit Draft Phase II RFI/RI Work Plan	27 May 94

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	21 May 93	Deleted	Deleted
Submit Final Phase I RFI/RI Report	18 Oct 93	Deleted	Deleted
Submit Final Phase II RFI/RI Work Plan	19 Sep 94	06 Aug 94	12 Jul 94

- Established revised dates in dispute resolution.

**June Work Activity
Status**

The RCRA/CERCLA investigation field work will continue through the approval of a Record of Decision and the subsequent construction of the final corrective remedial action in FY00 (if required). Further assessment/characterization under the remaining two ponds (207B South and 207C) will not be known until samples are available. The review and comment period by the regulatory agencies of the Draft Phase II Work Plan and the Phase I IM/IRA continued.

Technical Memoranda**Project****OU 4 - Solar Evaporation Ponds****TM #1****TM Title****TM Status****Vadose Zone Investigation****Draft submitted to EPA/CDH: 16 Nov 92****Comments received: 30 Nov 92**

Conditional Approval: 30 Nov 92
Projected submittal of final to EPA/CDH: 15 Dec 92
Actual submittal date of Final: 15 Dec 92
Submittal of TM 1 Vadose Zone Schedule: 19 May 93
EPA/CDH Final Approval of TM #1: 17 Jun 93

TM #2
TM Title
TM Status

Modification to Field Activities
Draft submitted to EPA/CDH: 18 Mar 93
Comments received: 07 May 93
Projected submittal of final to EPA/CDH: 07 Jun 93
Actual submittal date of final: 09 Jun 93
EPA/CDH final approval of TM #2: 30 Jun 93

TM #3
TM Title
TM Status

Environmental Evaluation
Draft submitted to EPA/CDH: 19 Mar 93
Comments received: 21 Apr 93 EPA,
02 Jun 93 CDH
Projected submittal of final to EPA/CDH: 30 Apr 93
Actual submittal date of final: 02 Jul 93
EPA/CDH final approval of TM #3: 30 Jul 93

TM #4
TM Title
TM Status

Human Health Risk Assessment Exposure Scenarios
Draft submitted to EPA/CDH: 19 Mar 93
Comments received: 21 Apr 93 EPA, 23 Apr 93 CDH
Projected submittal of final to EPA/CDH: 11 Jun 93
Actual submittal date of final: 11 Jun 93
EPA/CDH final approval of TM #4: 25 Jun 93

TM #5
TM Title
TM Status

Exposure Models
Projected submittal of draft to EPA/CDH: 01 Aug 93
Actual submittal of draft : 24 Jun 93
Projected submittal of final to EPA/CDH: 15 Oct 93
Received stop work order: 24 Aug 93

TM #6
TM Title
TM Status

Contaminants of Concern
Projected submittal of draft to EPA/CDH: 09 Nov 93
Projected submittal of final to EPA/CDH: 22 Dec 93
Received stop work order: 24 Aug 93

TM #7
TM Title
TM Status

Toxicity Assessment
Projected submittal of draft to EPA/CDH: 04 Nov 93
Projected submittal of final to EPA/CDH: 22 Dec 93
Received stop work order: 24 Aug 93

Planned Work for July

- Comments from the regulatory agencies on the Draft Phase II RFI/RI Work Plan are due.
- Begin efforts to streamline the Phase II implementation schedule.

Problems

None

Open Items

None

2.4.2 OU 4 REMEDIATION**Scope of Work Changes
This Period**

None

**Technical Approach
Changes This Period**

None

**IAG Milestone
Accomplishments**Submit Draft Phase I Proposed IM/IRA
Decision Document

27 May 94

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Final Phase I Proposed IM/IRA Decision Document	12 Sep 94	06 Aug 94	26 Jan 95
All Solar Ponds Emptied of Water and Sludge	new	20 Jan 95	31 Oct 94
IM/IRA Responsiveness Summary	25 Jan 95	14 Dec 94	05 Jun 95
Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	24 Jan 95	25 Feb 95	24 Jul 95
IM Title II Design	24 Jun 96	10 Feb 95	21 Jun 95
Begin Phase I IM/IRA Construction	28 Jan 97	27 Sep 95	27 Sep 95

**June Work Activity
Status**

**Phase I Interim Measures/Interim Remedial Action
Plan Program - Phase I RFI/RI Program -** The
regulatory agencies are currently reviewing the Draft
OU 4 Phase I RFI/RI Report in conjunction with the OU 4
IM/IRA Decision Document.

Post Closure Performance Monitoring Plan - In
conjunction with the IM/IRA Decision Document, the
regulatory agencies are currently reviewing the Post
Closure Performance Monitoring Plan (Section V of the
IM/IRA Decision Document). In accordance with current
plans to place Solar Ponds sludge back into the ponds,

actions have begun to modify the Post Closure Monitoring Program.

Phase II RFI/RI Work Plan - The regulatory agencies are currently reviewing the OU 4 Phase II RFI/RI Work Plan. Comments from the regulatory agencies are due in July 1994.

The Baseline Change Proposal for inclusion of sludge, geotechnical and utility investigations, technical rebaseline activities, Building 788 design, and expediting of some Title II design activities not considered remediation was passed by the DOE Change Control Board and the Rocky Flats Plant Change Control Board in June 1994.

Options for Streamline of Phase II RFI/RI Investigated - Options are being investigated to streamline the execution of the RFI/RI for Phase II remediation of OU 4. Currently, the most feasible option appears to be concurrent execution of both subsurface investigation and CMS/FS. This approach is warranted because significant data relating to chemistry and contamination of the groundwater have already been obtained from existing wells at the site. Information concerning the site's hydrogeology will be obtained through the planned RFI/RI field work and will be supplied to the CMS/FS in time to support the conclusion of the study. An additional target of streamlining is the development of a combined Proposed Plan and Corrective Action Decision/Final Action Decision deliverable as effected in the Phase I process. The administrative process could be shortened by two years.

Designs for Vehicle Access Gate and Site Strip-out Commenced - DOE granted conditional approval to commence Title II design for the vehicle access gate at Portal Three and removal of excess equipment at the site. The design for alarm system modifications and civil engineering requirements is being prepared. DOE held a meeting on June 27, 1994, to resolve issues that control the conditional nature of the Title II design.

Baseline Change Proposal for Sludge Disposal Advances - A Baseline Change Proposal, which supports planning for the inclusion of pond sludge disposal as part of the Phase I interim action and to support the modification of existing documentation as required by this initiative, is in progress.

Pond Sludge Status and Issues - Final rinse down and clean up of B South Pond remained on hold until repairs are finished to both vacuum trucks.

DOE's comments on the Health and Safety Plan for C Pond continued to be resolved. Salt milling began in C Pond. Milling was started in the northwest corner of the pond. The salt was crushed easily and should be readily slurried and vacuumed from the pond. Final preparations for C Pond vacuuming continued. The new operations order was completed and is in the approval process. Training will begin as soon as approval is received.

The last of the polyethylene tanks were installed in Tent Six, and the last eight tanks began leak testing.

Restack of the 904 Pad - The technical evaluation of the container vendor proposals commenced June 17, 1994, and was completed by June 28, 1994. Contract award will not start until DOE approval is received.

Regulatory - The CDH visited the 750 Pad to inspect the center row of tanks in Tent Three. Operations under way at the time prevented completion of the inspection. CDH will schedule a second inspection when the Tent Three tanks and the center row of tanks in Tent Four are accessible. Completion of the inspection is necessary before transferring sludge from Pond 207C to the tank farm and is expected to occur without schedule impact.

A new estimate has been received for construction of the storm drain extension. This estimate is less than the previous estimate. A new design was completed, and the package was submitted to Rocky Flats Procurement during the week of June 20, 1994. Construction is scheduled for completion on July 14, 1994.

Costs for placing Building 910 in long-term shutdown have been running higher than expected. All maintenance and testing that can be delayed are being delayed until restart. Additionally, costs for items that have been added since February 1994 are being estimated to determine if they are significant (i.e., Conduct of Operations implementation and the Pressure Safety Program).

The Pressure Safety Program is being planned and instituted in Building 910. The extent of the scope for this work is still being developed.

Maintenance work continues on the pumps and evaporators in Building 910. Conduct of Operations implementation is essentially complete.

Planned Work for July

- Continue salt milling operations in Pond 207C.
- Commence sludge removal operations in Pond 207C (this activity is dependent on completion of salt milling).
- Commence Title II Design of Phase II remediation.
- Commence Title II Design of site strip out and vehicle access at Portal Three.

Problems

None

Open Items

Incorporate treated pond sludge into the IM/IRA.

There is uncertainty regarding acceptance of the State of Colorado's Corrective Action Management Unit regulation. The State of Colorado ratified Corrective Action Management Unit legislation that is more restrictive than the EPA's legislation. The effect of CDH's more restrictive legislation on OU 4 remediation is not yet known.

2.5 OU 5 - WOMAN CREEK

OU 5, the Woman Creek Priority Drainage, encompasses assessment and remediation of 11 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSS 133.1 to 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSS 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881; and Water Treatment Plant Backwash Pond (IHSS 196). Two additional surface disturbances have been identified, one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. IHSS 196 has been administratively assigned to this OU. Possible contamination in this OU was caused by landfill operations, stormwater runoff into holding ponds, and ash-pit operations. Constituents in OU 5 are believed to include nitrates, depleted uranium, metals, beryllium, solvents, pesticides, oils, paints, and cleaners. Media affected include soils, sediments, surface water, groundwater, and air.

Scope of Work Change This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
	Submit Final Phase I RFI/RI Work Plan	30 Aug 91

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	30 Nov 93		11 May 95*
Submit Final Phase I RFI/RI Report	03 May 94		14 Nov 95*

* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

June Work Activity Status

The comment/response sheets to TM #13, *Modeling*, were returned by EPA on June 21, 1994. CDH comments are still pending. Comments will be responded to after the CDH comments are received.

TM #15, *Addendum to the Field Sampling Plan*, is still in review by the EPA and CDH. Final comments from EPA and CDH were received in June 1994 and are currently being addressed.

The problems with the statistical application software code for the Gilbert methodology background are being

resolved. The updated code given to the subcontractor was not compatible with the database. The background statistics were run in June 1994.

Modeling activities continue on air dispersion, groundwater, and surface water. Pertaining to the air dispersion activities, preliminary test runs of the fugitive dust model were completed. Regarding the groundwater activities, a map of the bedrock surface in the OU 5 area was completed and is being entered into AutoCAD.

Technical Memoranda

Project

OU 5 - Woman Creek Priority Drainage Remedial Investigation

TM #1

TM Title

TM Status

Surface Water and Sediments

When preparation was concluded: 30 Nov 92

Projected date of submittal to EPA/CDH: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #2

TM Title

TM Status

Surface Geophysics

When preparation was concluded: 30 Nov 92

Projected date of submittal to EPA/CDH: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #3

TM Title

TM Status

Soil Sampling at IHSS 115

When preparation was concluded: 07 May 93

Projected date of submittal to EPA/CDH: 07 May 93

Actual date of submittal: 26 Jan 93

TM #4

TM Title

TM Status

Soil Sampling at IHSS 133

When preparation was concluded: 07 Jun 93

Projected date of submittal to EPA/CDH: 07 Jun 93

Actual date of submittal: 12 Apr 93

TM #5

TM Title

TM Status

Soil Gas Sampling at IHSS 115

When preparation was concluded: 07 May 93

Projected date of submittal to EPA/CDH: 07 May 93

Actual date of submittal: 25 Mar 93

TM #6	
TM Title	Cone Penetrometer at IHSS 115
TM Status	When preparation was concluded: 14 Apr 93 Projected date of submittal to EPA/CDH: 14 Apr 93 Actual date of submittal: 25 Mar 93
TM #7	
TM Title	Soil Borings at IHSS 133
TM Status	When preparation was concluded: 07 May 93 Projected date of submittal to EPA/CDH: 07 May 93 Actual date of submittal: 19 Feb 93
TM #8	
TM Title	Monitoring Wells at IHSS 115
TM Status	TM #8 has been canceled. It has been replaced by a letter outlining the justification behind the location of the wells in IHSS 115
TM #9	
TM Title	Monitoring Wells at IHSS 133, Ash Pits, Incinerator and Concrete Wash Pad
TM Status	When preparation was concluded: 14 May 93 Projected date of submittal to EPA/CDH: 06 May 93 Actual date of submittal: 06 May 93 EPA/CDH comments scheduled: 11 Jun 93 Actual date of submittal: 28 Jun 93
TM #10	
TM Title	Soil Borings at IHSS 209
TM Status	When preparation was concluded: 06 Mar 93 Projected date of submittal to EPA/CDH: 06 Mar 93 Actual date of submittal: 06 Mar 93
TM #11	
TM Title	Contaminants of Concern
TM Status	When preparation is concluded or is estimated to be concluded: 17 Aug 94 Actual date of submittal: To be determined
TM #12	
TM Title	Exposure Scenarios
TM Status	When preparation was concluded: 24 Nov 93 Projected date of submittal to EPA/CDH: Submittal of TM #12 was delayed due to the Human Health Risk Assessment stop work order. Actual date of submittal: To be determined

TM #13
TM Title
TM Status

Modeling
When preparation was concluded: 12 Jan 94
Projected date of submittal to EPA/CDH: 22 Jul 94
Actual date of submittal: To be determined

TM #14
TM Title
TM Status

Toxicity Assessment
When preparation is concluded or is estimated to be concluded: 17 Aug 94
Projected date of submittal to EPA/CDH: 17 Aug 94
Actual date of submittal: To be determined

TM #15
TM Title
TM Status

Addendum to the Field Sampling Plan
When preparation is concluded or is estimated to be concluded: 22 Jul 94
Projected date of submittal to EPA/CDH: 22 Jul 94
Actual date of submittal: 16 May 94

Planned Work for July

- Continue work on the Human Health Risk Assessment (data aggregation and background statistical analysis).
- Finalize TM #13, *Modeling*.
- Finalize TM #15, *Addendum to the Field Sampling Plan*.

Problems

None

Open Items

The revised schedule, which incorporates impacts from the Human Health Risk Assessment stop work order, has not been approved.

2.6 OU 6 - WALNUT CREEK

OU 6, the Walnut Creek Priority Drainage, encompasses assessment and remediation of 19 IHSSs: A-series Detention Ponds, Ponds A-1 through A-4 (IHSS 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North Spray Field (IHSS 167.1); the East Area Spray Field (IHSS 216.1), the Trenches A, B, and C (IHSS 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143), and the Soil Dump Area (IHSS 156.2).

Completion of field operations resulted in obtaining the following samples from the IHSSs in OU 6: stream sediment, pond sediment, surface soil, subsurface soil, and surface and groundwater.

Eleven new groundwater monitoring wells were installed in OU 6 to supplement five existing wells. These were sampled quarterly for one year. Geophysical surveys and radiation surveys were performed in selected areas to supplement the sampling activities.

The regulatory agencies have proposed a new IM/IRA on the operation of the Rocky Flats Ponds. On April 15, 1994, the regulatory agencies and DOE agreed that the ponds will be managed by the Pond Water Management IM/IRA.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
	Submit Final Phase I RFI/RI Work Plan	16 Sep 91

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	04 Aug 93	10 Jun 94	11 May 95*
Submit Final Phase I RFI/RI Report	07 Jan 94	18 Nov 94	16 Nov 95*

* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

June Work Activity Status Contaminants toxicity screens were completed in June 1994, and potential contaminants were determined. Nature and extent activities continue. Work also continues on Section Three of the final report, Physical

Characteristics. Chapter Two, OU 6 Field Investigation, incorporated the final preliminary draft comments.

The polychlorinated biphenyl sampling project began on May 23, 1994. Sampling of all the ponds was completed by June 30, 1994.

Preliminary work began on developing the CDH source areas, the Contaminants of Concern TM, and the final schedule that was presented to the regulatory agencies at the end of June 1994.

Pond Water Management IM/IRA - An informational briefing package was prepared in support of the June 8, 1994, presentation. The package consisted of an agenda for the meeting, a narrative description of the ponds, and 19 graphics, which depict physical details of the ponds, dams, and stormwater outfalls. The packages were distributed to the CDH, EPA, U.S. Fish and Wildlife Service, and the Cities of Broomfield, Northglenn, Westminster, and Thornton.

A meeting was held among the EPA, CDH, and the Cities of Westminster and Broomfield on June 8, 1994, to demonstrate the significant improvements in spill control, water management, and ecological programs since the 1989 chromic acid incident. Fifteen speakers from Rocky Flats gave technical presentations.

DOE received the third quarter project update for the Pond Water Management IM/IRA on June 1, 1994.

A meeting was held on June 14, 1994, concerning the preliminary preparation of the pond operations options for short-term (present through three years) and long-term (four+ years). The pond operation options were selected by CDH, EPA, and DOE. DOE will send the option briefs to the stakeholders in preparation for a meeting to be held in July 1994. The "discussed" option briefs will become the basis for expansion in the second IM/IRA Decision Document. The short-term options are as follows: batch discharge with increased dam monitoring, short-term terminal dam upgrades, spray evaporation, direct discharge of Waste Water Treatment Plant effluent to Segment Four, treatment system, flow-through discharges, and interior pond management. The long-term options are as follows: purchase Great Western Reservoir and incorporate into ponds system, increase existing ponds capacity, and improve all dams,

onsite water consumption to minimize offsite discharges,
and flow-through discharges with real-time monitoring.

Technical Memoranda

Project

OU 6 - Walnut Creek

TM #1

TM Title

TM Status

Work Plan Modifications

Approved by EPA: 08 Jan 93

TM #2

TM Title

TM Status

Exposure Scenarios

When preparation is concluded or estimated to be
concluded: 15 Nov 94

Projected date of submittal to EPA/CDH: 15 Nov 94

Actual date of submittal: To be determined

Date EPA/CDH comments received: To be determined

TM #3

TM Title

TM Status

Modeling Description

When preparation is concluded or is estimated to be
concluded: 10 Nov 93

Projected date of submittal to EPA/CDH: 10 Nov 93

Actual date of submittal: 10 Nov 93

Date EPA/CDH comments received: 23 Dec 93

TM #4

TM Title

TM Status

Contaminants of Concern

When preparation is concluded or is estimated to be
concluded: 29 Aug 94

Projected date of submittal to EPA/CDH: 29 Aug 94

Actual date of submittal: To be determined

Date EPA/CDH comments received: To be determined

TM #5

TM Title

TM Status

Toxicity Factors

When preparation is concluded or is estimated to be
concluded: 05 Aug 94

Projected date of submittal to EPA/CDH: 05 Aug 94

Actual date of submittal: To be determined

Date EPA/CDH comments received: To be determined

Planned Work for July

- Continue work on the FS.
- Receive approval on the revised scope and schedule for the Human Health Risk Assessment.

Problems

None

Open Items

The revised schedule, which incorporates impacts from the Human Health Risk Assessment stop work order, has not been approved.

2.7 OU 7 - PRESENT LANDFILL

OU 7, the Present Landfill, is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of eight IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill and soils beneath the landfill potentially contaminated with leachate. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August 1968 and was originally constructed to provide for disposal of Rocky Flats nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure. In order to maintain the landfill pond at an acceptable volume to prevent discharge, spray evaporation of landfill pond water was applied to the north and south of the landfill pond comprising IHSSs 167.2 and 167.3, respectively.

Scope of Work Changes This Period

As a result of the Senior Executive Committee Dispute Resolution, four new milestones were added to the OU 7 work scope concerning the Landfill Leachate Collection IM/IRA.

Technical Approach Changes This Period

As a result of the Senior Executive Committee Dispute Resolution, a separate IM/IRA is required for the landfill leachate.

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91
Submit Draft Phase I RFI/RI Report	23 May 94
Submit Draft Phase II RFI/RI Work Plan	23 May 94

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
<u>Landfill Closure IM/IRA</u>			
Submit Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94		03 May 95*
Submit Final Phase I Proposed IM/IRA Decision Document	06 Apr 95		03 Jul 95*
Submit IM/IRA Responsiveness Summary	14 Aug 95		04 Oct 95*
<u>Landfill Leachate Collection IM/IRA</u>			
Submit Preliminary Draft IM/IRA to CDH/EPA	13 Oct 94		13 Oct 94*
Release Final Draft IM/IRA for Public Comment	25 Nov 94		25 Nov 94*

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Final Responsiveness Summary and IM/IRA to CDH/EPA	06 Apr 95		03 Jul 95*
Release Final Responsiveness Summary and IM/IRA	22 Mar 95		22 Mar 95*

* Dates are currently being negotiated with CDH.

June Work Activity Status

A meeting was held on June 1, 1994, to discuss ideas and objectives for the conceptual design of the Landfill Leachate Collection IM/IRA. The contract for the OU 7 Landfill Leachate Collection IM/IRA was awarded on June 3, 1994. The site of the Leachate Collection System was visited to develop the design and to identify potential locations of future monitoring wells. Biweekly meetings will be held with CDH and EPA.

A meeting was held on June 8, 1994, to discuss the Landfill Leachate IM/IRA Project. Items discussed included screening of available technologies, National Environmental Policy Act integration, and Applicable or Relevant and Appropriate Requirements. On June 15, 1994, a meeting was held to discuss ideas and objectives for the conceptual design of the Landfill Leachate Collection IM/IRA. Considerations were given to the use of onsite treatment capabilities for the Landfill Leachate IM/IRA. OU 1 and OU 2 have water treatment facilities that may be used for the treatment of OU 7 leachate and contaminated groundwater.

A meeting was held on June 22, 1994, with CDH and EPA to discuss the short list of technologies for collection and treatment of landfill leachate. CDH clarified the scope of the IM/IRA. A leachate collection system with treatment at OU 1 or OU 2 will be constructed in 1995. DOE implementation of the National Environmental Policy Act does not require a National Environmental Policy Act analysis outside of CERCLA.

The TM, Revised Work Plan, is undergoing review by the regulatory agencies. Comments were delayed from the scheduled transmittal date of June 13, 1994. This delay will impact critical path activities and delay Phase II field work.

Comments were not received from the CDH on the OU 7 Revised Work Plan on June 13, 1994. This delay falls on the critical path of OU 7 activities and will have an impact on the field work start date.

Responses to comments have been finalized for the addendum to the Site-Specific Health and Safety Plan. The Health and Safety Plan was completed on June 10, 1994.

Technical Memoranda**Project****OU 7 - Present Landfill****TM #1****TM Title****TM Status****Exposure Scenarios**

Initial reviews completed by DOE/Headquarters and DOE/DOE. Review completed by EPA and CDH. Response summary developed and submitted to all parties for review. Reviews complete. Revised response summary completed 25 May 93, with a final review under way prior to transmittal to the regulatory agencies.

TM #2**TM Title****TM Status****Model Description.**

Transmitted to EPA and CDH for review: 08 Jan 93

Initial review by EPA, CDH, and DOE completed:
30 April 93

Draft response summary complete: 25 May 93

TM #3**TM Title****TM Status**

Addendum to Final Phase I RFI/RI Work Plan. Surface Soil and Asbestos Pit Disposal Area Characterization Plan.

Transmitted to the EPA and CDH for review: 08 Feb 93

Comments received: 26 Apr 93

Conditional approval by the EPA and CDH received:
22 Feb 93

Clarification of outstanding comments from EPA and CDH received: 03 May 93

TM**TM Title****TM Status****Revised Work Plan**

Transmitted to EPA and CDH for review: 23 May 94

Comments received: To be determined

Planned Work for July

- Continue development of the Environmental Assessment.
- Continue work on options analysis and conceptual design for leachate collection and landfill closure.
- Receive formal approval from the regulatory agencies on the TM, Revised Work Plan.
- Conduct Readiness Review for field activities.
- Obtain necessary permits for field activities.

Problems

None

Open Items

Awaiting comments on the Revised Work Plan.

2.8 OU 8 - 700 AREA

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats. Contamination sources within the various IHSSs include above ground and underground tanks, equipment washing areas, and releases inside buildings that potentially affected areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and in some cases, through precipitation runoff. The chemical composition of the contaminants varies widely between the IHSSs and ranges from low-level radioactive and mixed wastes to nonradioactive organic and inorganic compounds.

OU 8 is within the Industrial Area (IA) at Rocky Flats and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques (e.g., surface soil sampling and radiation survey). The main benefits from integrated management of the IA OUs are improved oversight, coordination, and reduced costs.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	01 May 92
	Submit Final Phase I RFI/RI Work Plan	01 Dec 92

Future IAG Milestone Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	14 Feb 94	Denied	07 May 02
Submit Final Phase I RFI/RI Report	12 Jul 94	Denied	07 Jan 03

June Work Activity Status

Data collected from the field work using the high purity Germanium detector for radiation surveys on OU 8 IHSSs were entered into the Rocky Flats Environmental Database System and the Geographical Information System. This new information will be compiled with the existing high purity Germanium detector data for the IA. New high purity Germanium detector survey maps will be generated and submitted to the DOE.

The review period for the Preliminary Draft TM #1, *Data Compilation for Foundation and Building Under Drains*, ended May 27, 1994. Comments from the CDH were received and are being incorporated into the revised TM #1. Comments from the EPA have not yet been received.

Early removal actions consisting of removal of two steam condensate tanks from north of Building 774 are in preparation and are expected to be completed during FY94.

The subcontract modification to authorize the nonintrusive field investigation activities was prepared and submitted to Rocky Flats Procurement on June 20, 1994. Preparatory activities for this field work (e. g., training and equipment procurement) are under way.

A meeting was held to address schedule and readiness issues related to the upcoming nonintrusive field activities. Site walks were held in preparation for the nonintrusive work on June 20, 1994.

Work is ongoing to prepare position papers in support of DOE's position on the RFI/RI Work Plan approval and the related issue of the missed IAG milestone for the Phase I RFI/RI Report .

Industrial Area Operable Units (8, 9, 10, 12, 13, and 14) - The Statement of Work for the modification to the IA OU subcontract continued to be prepared. Draft copies were reviewed and changes were made. The modification is anticipated to be submitted to Rocky Flats Procurement in July 1994. The modification will include confined space activities, some intrusive activities, the Geographical Information System, the Geostatistical data evaluations, computer usage costs, and other miscellaneous tasks.

Work to begin the Environmental Evaluation's summer sampling continued. The field sampling plan and the implementation plan were reviewed by the appropriate organizations. Comments received on the plans are being addressed. Field activities are planned for July 1994.

Technical Memoranda

Project

OU 8 - 700 Area

TM #1

TM Title

Footing/Under Drains Data Compilation and Field Sampling Plan

TM Status

Projected date of submittal to EPA/CDH: 22 Apr 94
Actual date of submittal: 05 May 94
Date EPA/CDH comments received: 08 Jun 94,
comments pending EPA

Planned Work for July

- Document control for OU 8 RFI/RI Work Plan.
- Continue work on Operational Readiness Review for nonintrusive field work.
- Continue work on early action tank removals.

Problems

None

Open Items

None

2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This project involves the investigation and remediation of a series of tanks and associated process waste lines. The original process waste lines consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe sections, 40 single and multiple storage tank sites, and three other areas of suspected process waste leakage is included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced between 1975 and 1984 by the new process waste system. Some tanks and lines from the original system were incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI Phase I Work Plan includes inspection and sampling of the tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred, near pipe joints and valves, at approximately 100 to 200-foot intervals along the pipelines, and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the Phase I RFI/RI will determine the need for interim and/or final remediation action.

OU 9 is within the IA at Rocky Flats and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques (e.g., surface soil sampling and radiation survey). The main benefits from integrated management of the IA OUs are improved oversight, coordination, and reduced costs.

**Scope of Work
Changes This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
	Submit Final Phase I RFI/RI Work Plan	26 Nov 91

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	11 Apr 94	Denied	04 Jan 01
Submit Final Phase I RFI/RI Report	06 Sep 94	Denied	16 Sep 03
Submit Draft Phase II RFI/RI Work Plan	10 Mar 95		23 Jul 04

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95		31 Oct 03
Submit Final Phase II RFI/RI Work Plan	07 Aug 95		01 Apr 05
Submit Final Phase I Proposed IM/IRA Decision Document	27 Sep 95		12 Jul 04

June Work Activity Status

Work continued on the preparation of the Draft TM #1, *Volume II, Part A - the Field Sampling Plan for Outside Pipelines*. Some sections of the draft are under review. The complete draft of this document is tentatively scheduled to be completed in July 1994.

TM #1, *Volume I, Part A, Field Sampling Plan for Outside Tanks*, was finalized and received by DOE. Approval was granted by CDH on April 11, 1994, with the understanding that issues dealing with active tanks and specific comments regarding the field investigation be resolved informally. Efforts were initiated to get the document controlled and to initiate field activities.

An addendum to the existing Statement of Work for nonintrusive field investigation was prepared for training and modifying the IA Health and Safety Plan in support of the OU 9 outside tank investigation. The actual field work could not be included because it is outside of the scope of the original Statement of Work.

Efforts to evaluate tanks for removal actions are ongoing. The evaluation of tanks is currently compounded by field investigation activities that have not been conducted at these locations. Planning activities associated with removal actions will continue to be performed in parallel with the investigation.

CDH has indicated that active outside tanks that are not RCRA Interim Status tanks should be included in the outside tank investigation. This would mean that six additional tanks need to be included in the investigation. DOE is actively working this issue through the CDH. This issue is not expected to delay the field investigation of outside tanks that are listed in the TM.

The milestone for the OU 9 Draft Phase I RFI/RI Report due April 11, 1994, has been missed. CDH has denied a request for an extension for both the OU 9 Draft and Final Phase I RFI/RI Report in a letter dated

April 14, 1994. CDH also indicated that the missed milestone violates the IAG and that penalties would be assessed starting from the date DOE received the notice. DOE is actively negotiating this issue with the regulatory agencies, but final agreement has not been reached.

Technical Memoranda

Project

OU 9 - Original Process Waste Lines

TM #1

TM Title

Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks

TM Status

When preparation was concluded: Jan 94

Projected date of submittal to EPA/CDH: Mar 94

Actual date of submittal: 15 Mar 94

Date EPA/CDH comments were received: To be determined

TM #1

TM Title

Field Sampling Plan - Volume II, Part A, Outside Pipelines

TM Status

When preparation is concluded or is estimated to be concluded: Jul 94

Projected date of submittal to EPA/CDH: Aug 94

Actual date of submittal: To be determined

Date EPA/CDH comments were received: To be determined

Planned Work for July

- Complete Draft of TM #1, *Volume II, Part A, Field Sampling Plan for Outside Pipelines*.
- Update IA Health and Safety Plan for field investigation of outside tanks.
- Train personnel for field investigations of outside tanks.

Problems

The milestone for the OU 9 Draft Phase I RFI/RI Report due April 11, 1994, has been missed. CDH has denied a request for an extension for both the OU 9 Draft and Final Phase I RFI/RI Report in a letter dated April 14, 1994. CDH also indicated that the missed milestone violates the IAG, and that penalties would be assessed starting from the date DOE received the notice.

Open Items

The CDH has indicated that active outside tanks that are not RCRA Interim Status tanks should be included in the outside tank investigation. This would mean that six additional tanks need to be included in the investigation. DOE is actively working this issue through CDH. This issue is not expected to delay the field investigation of outside tanks that are listed in the TM.

2.10 OU 10 - OTHER OUTSIDE CLOSURES

OU 10 is composed of 15 IHSSs scattered throughout plantsite. Six of the IHSSs are located in the Protected Area, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout plantsite. The types of wastes and contaminants identified at these sites include pondcrete/saltcrete storage, diesel and fuel spills, and heavy metal contamination. A Draft and Final TM will be developed that will summarize the nonintrusive portion of the OU 10 field work. Other IHSS-specific intrusive activities are scheduled for FY94.

OU 10 is currently being managed collectively with the other IA OUs (8, 9, 12, 13, and 14). All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil-gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	27 Nov 91
	Submit Final Phase I RFI/RI Work Plan	01 May 92

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	25 Aug 94		02 Nov 15
Submit Final Phase I RFI/RI Report	30 Jan 95		19 Jul 16
Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95		26 Feb 18
Submit Draft Phase II RFI/RI Work Plan	27 Jun 95		25 May 17

June Work Activity Status

Collection of the remaining surficial soil physical parameter samples will start after a laboratory for analysis is selected. This laboratory is anticipated to be "on-line" by the end of June 1994.

All concerns that were raised by CDH during its site audit conducted in May 1994 have been addressed.

Responses to issues raised by CDH concerning soil-gas sampling were provided.

An autosampler has been ordered for the Gas Chromatograph/Mass Spectrometer and is tentatively

scheduled to be installed in the next two to three weeks. This will be used to automate the Gas Chromatograph/Mass Spectrometer so that automated analysis can occur during off shifts. This acquisition should accelerate soil-gas sampling operations because the sampling will not be as dependent upon field laboratory analysis capacity during the day shift.

The 964 laydown yard (IHSS 176) material removal project is under way. It is anticipated that all of the material that is stored on the east side of the IHSS can be removed by the end of August 1994. Conflicts have occurred between sampling by the soil-gas crews in OU 10 and the accelerated action team work force. It is hoped that both activities can occur simultaneously.

Industrial Area Individual Hazardous Substance Site Material Removal/Accelerated Clean-up Actions -

Additional meetings were held with representatives of the accelerated action team and EG&G to discuss the outstanding technical issues that could be a problem in implementing the tank removal action at IHSS 129. No final resolution to these problems was identified and this project will not be supported until all technical issues are resolved. Discussions will continue until all problems are resolved.

TM #1, for the nonintrusive field work, is under development. The Draft TM is tentatively scheduled to be delivered to the regulatory agencies in November 1994.

Planned Work for July

- Complete soil-gas surveys.
- Collect physical soil samples.
- Evaluate nonintrusive data for nonintrusive TM #1.

Problems

None

Open Items

There has been no resolution of the issue concerning IHSSs 213 and 214. These areas still have not been administratively transferred to OU 4, or included as part of a RCRA Part B Permit Modification. No Phase I Assessment work will be conducted at these IHSSs until all material has been removed.

2.11 OU 11 - WEST SPRAY FIELD

The West Spray Field is located within the Rocky Flats buffer zone immediately west of the 130 Trailer complex. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207-B North and Center (contaminated groundwater in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105 acres, 38 of which received direct application of solar pond water. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and groundwater.

Scope of Work Changes This Period None

Technical Approach Changes this Period Investigatory drilling utilizing the resonant sonic versus the rotary-sonic drilling method has begun.

The RFI/RI investigation uncovered photographic evidence that the West Spray Field may have extended farther east than originally thought. The area in question will be added to the field investigation with a contract modification.

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
	Submit Final Phase I RFI/RI Work Plan	02 Jan 92

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phases (combined) RFI/RI Report	20 Sep 94		20 Jul 95
Submit Final Phases RFI/RI Report	22 Feb 95		19 Sep 95
Submit Draft Phase II RFI/RI Work Plan	21 Aug 95		Deleted

June Work Activity Status DOE discussed a revised IAG milestone schedule for OU 11. The proposed schedule will combine Phase I and II RFI/RI milestones and eliminate the IM/IRA, the Corrective Action Decision/Record of Decision, and the Corrective Action/Final Action milestones. This will result in the completion of the IAG milestones by March 1997 instead of the current date of May 2001.

The regulatory agencies gave verbal approval of the revised Field Sampling Plan. The DOE authorized field work to begin. The drillers and the sonic-drilling rig arrived on June 13, 1994. The pre-evolution briefing was held, and the Readiness Review was signed off.

The TM to combine both phases of the RFI/RFI process has been approved. Investigatory drilling has begun. Surface soil sampling is in progress.

Technical Memoranda

Project

OU 11 - West Spray Field

TM Title
TM Status

Revised Field Sampling Plan and Data Quality Objectives
Informally submitted to EPA/CDH: 2 Feb 94
Approved.

TM #1
TM Title
TM Status

Exposure Scenarios
When preparation was concluded: Mar 94 (late)
Projected date of submittal to EPA/CDH : 20 Jul 94
Actual date of submittal: To be determined
Date EPA/CDH comments were received: To be determined

TM #2
TM Title
TM Status

Modeling
When preparation was concluded: 22 Mar 94 (late)
Projected date of submittal to EPA/CDH: 10 Aug 94
Actual date of submittal: To be determined
Date EPA/CDH comments were received: To be determined

TM #3
TM Title
TM Status

Contaminants of Concern
When preparation is concluded or is estimated to be concluded: 20 Sep 94
Projected date of submittal to EPA/CDH: 09 Nov 94
Actual date of submittal: To be determined
Date EPA/CDH comments were received: To be determined

TM #4
TM Title
TM Status

Toxicity
When preparation is concluded or is estimated to be concluded: 10 Oct 94
Projected date of submittal to EPA/CDH: 12 Dec 94
Actual date of submittal: To be determined

Date EPA/CDH comments were received: To be determined

Planned Work for July

- Complete drilling of at least eight bore holes and install monitoring well equipment.
- Complete surface soil sampling.

Problems

Technical issues concerning sonic drilling have caused minor delays.

Open Items

The proposal to extend the investigation outside of the IHSS.

2.12 OU 12 - 400/800 AREA

The 400/800 Area involves assessment and remediation of the following 10 IHSSs within the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - northeast and southwest of Building 460 (IHSSs 136.1, and 136.2); Building 881 - Conversion Site (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an Environmental Evaluation and a Human Health Risk Assessment. Implementation of this Work Plan includes field work and sample analysis. After implementation, a Phase I RFI/RI Report will be prepared. A Phase II Investigation may be performed as necessary. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation may consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 12 is within the IA at Rocky Flats and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques (e.g., surface soil sampling and radiation survey). The main benefits from integrated management of the IA OUs are improved oversight, coordination, and reduced costs.

**Scope of Work Changes
This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	08 May 92
Accomplishments	Submit Final Phase I RFI/RI Work Plan	05 Oct 92

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	20 Apr 94	Denied	11 Mar 99
Submit Final Phase I RFI/RI Report	15 Sep 94	Denied	17 Nov 99

**June Work Activity
Status**

Preparations for OU 12 soil-gas surveys have begun. Location staking and utility clearances were initiated. Within the integration of the IA OUs, OU 10 will need to finish its soil-gas surveys before OU 12 can begin.

Analytical results for the surficial soil samples continued to be received. Preliminary data review is under way.

Technical Memoranda

The first TM scheduled for OU 12 is the nonintrusive TM due in August 1994.

Planned Work for July

- Plan sodium iodide surveys to be conducted while OU 12 awaits the availability of the soil-gas crew and equipment.
- Continue staking of locations for the soil-gas survey. Soil-gas surveys are planned to begin in July 1994.
- Continue to receive analytical results.
- Continue preliminary data review.

Problems

None

Open Items

None

2.13 OU 13 - 100 AREA

Cleanup of the 100 Area involves the assessment and remediation of 14 Individual Hazardous Substance Sites (IHSSs): Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2 and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); and the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will consist of preparing a Phase I RFI/RI Work plan, which will include both an Environmental Evaluation and a Human Health Risk Assessment. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 13 is within the IA at Rocky Flats and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques (e.g., surface soil sampling and radiation survey). The main benefits from integrated management of the IA OUs are improved oversight, coordination, and reduced costs.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	15 May 92
Accomplishments	Submit Final Phase I RFI/ RI Work Plan	12 Oct 92

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	08 Aug 94		24 Mar 99
Submit Final Phase I RFI/RI Report	11 Jan 95		02 Dec 99

**June Work Activity
Status**

The CDH has submitted comments on the Draft OU 13 TM #1, *Addendum to the Field Sampling Plan*, which makes slight changes to the field sampling plan presented in the OU 13 Phase I RFI/RI Work Plan. The CDH approved the sampling locations for the following IHSSs: 128, 134(N) and (S), 171, 186, 157.1, and 190. CDH recommended changes to 117.1 and 197, 158 and 117.2, and 117.3 and 152. The CDH approved sampling in IHSS 157.1. An OU 13 project-specific Sediment Sampling and Analysis Plan is being formulated, and a meeting with CDH was held to discuss the analysis plan on June 23, 1994. Response to comments and final revisions are under way and should be completed by July 1, 1994. In the meantime, CDH approved the surficial sampling locations as modified for IHSSs 117.2, 117.3, 148 and 152.

The Operational Readiness Review for OU 13 was completed and closed out with the exception of issuing TM #1, *Addendum to the Field Sampling Plan*, as a controlled document.

The procedure FO.28 Tank and Pipeline Investigation continues to be modified. A new draft of the procedure was completed. Comments are being incorporated into the final version of the procedure.

Surficial soil sampling in OU 13 has begun with an OU-specific safety meeting and a site walkdown of approved sampling locations on June 1, 1994. Sampling is complete in IHSSs 157.1 and 134(N), 128, 171, 134 (S), 158, and 186. Sampling will continue with IHSSs 117.2, 117.3, 148 and 152.

A Bicon Field Instrument for Detection of Low-Energy Radiation field survey (NaI gamma detector) was completed at IHSSs 117.1 and 197, and in the vicinity of a high purity Germanium detector sampling point on Central Avenue and north of the 904 Storage Pad. Elevated Field Instrument for Detection of Low-Energy Radiation readings were observed and Radiation Engineering was contacted per the Health and Safety Plan. It was determined that the elevated readings were because of the Radiological Waste stored in connexes on the 904 Pad immediately adjacent to the site.

Additional high purity Germanium detector readings were made in OU 13 in response to comments made by CDH.

These results have been posted on the Geographic Information System database.

An action plan regarding the removal of material stored in IHSSs 117.1/197 is being developed. Approximately 30 crates of material generated during the installation of secondary liners in the valve vaults are involved. The issue of funding will need to be addressed. DOE does not want Environmental Restoration funding to be used to remove materials arising from plant services activities.

A meeting will be held with CDH and EPA to discuss their comments on the OU 13 TM #1, *Addendum to the Field Sampling Plan*. DOE and EG&G have discussed the possibility of adding approximately 30 sediment sampling locations and approximately 10 surface-water locations in the ditches surrounding the OU 13 IHSSs.

Technical Memoranda

Project

OU 13 - 100 Area

TM #1

TM Title

TM Status

Addendum to Field Sampling Plan

When preparation is concluded or is estimated to be concluded: Feb 94

Projected date of submittal to EPA/CDH: Feb 94

Actual date of submittal: 03 Mar 94

Date EPA/CDH comments received: 16 May 94

A nonintrusive TM will be prepared in FY95 summarizing the nonintrusive field work and recommending Stage II activities for the remedial investigation intrusive field work.

Planned Work for July

- Continue with surficial soil sampling.
- Work on contract modifications to allow for surface water and sediment sampling.
- Begin soil-gas sampling upon the completion of OU 12 sampling.

Problems

None

Open Items

The IAG milestone date of August 8, 1994, for the Draft Phase I RFI/RI Report will not be met.

2.14 OU 14 - RADIOACTIVE SITES

Work at the "Radioactive Sites" involves the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills, and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an Environmental Evaluation and an Human Health Risk Assessment. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as a subsequent phase to the assessment phase.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and feasibility study of the project. This process includes review and approval by EPA and CDH, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 14 is within the IA at Rocky Flats and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques (e.g., surface soil sampling and radiation survey). The main benefits from integrated management from the IA OUs are improved oversight, coordination, and reduced costs.

**Scope of Work Changes
This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	26 Jun 92
Accomplishments	Submit Final Phase I RFI/RI Work Plan	19 Oct 92

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Schedule</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	20 Dec 94		13 Feb 01
Submit Final Phase I RFI/RI Report	23 May 95		22 Oct 01

**June Work Activity
Status**

Work continues on the proposal for a more streamlined and cost efficient sampling strategy for the field investigations at OU 14. An expected modification to the OU 14 Work Plan is planned to facilitate changing the sampling locations and methodologies.

The Operational Readiness Review for OU 14 began with the construction of the history file for the OU 14 Phase I RFI/RI Work Plan.

Prior to initiation of field work sampling activities, soil disturbance permits were prepared and submitted for approval.

The IHSS 162 is connected with the Original Process Waste Lines that are being investigated in OU 9. The description in the Work Plan will be corrected and the Field Sampling Plan will be amended to correctly locate the samples. A discussion to transfer this IHSS to OU 9 is warranted; however, the Stage I studies planned in the OU 14 Work Plan should proceed as amended.

A Draft Document Modification Request was prepared to change the two-inch soil scrapes specified in the OU 14 Work Plan to be consistent with GT.08 sampling techniques and with work in the other IA OUs. This request will need to be approved by CDH and EPA.

Technical Memoranda

The current Five-Year Plan indicates that the following TMs were scheduled for completion in March 1994: *Human Health Risk Assessment-Exposure Assessment* and *Human Health Risk Assessment-Modeling*. These tasks require rescheduling because of the integration of OUs 8, 9, 10, 12, 13, and 14. A new schedule has been developed. Currently, only nonintrusive/limited RI field work is scheduled for OU 14 in FY94.

A nonintrusive TM will be prepared in FY95 summarizing the nonintrusive field work and recommending Stage II activities for the RI intrusive field work.

Planned Work for July

- Complete Operational Readiness Review.
- Begin surficial soil sampling on or before August 1, 1994.
- Continue to work on streamlining the OU 14 activities.

Problems

None

Open Items

The IAG milestone date of December 20, 1994, for the Draft Phase I RFI/RI Report will not be met.

2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 is comprised of the following six IHSSs:

- IHSS 178, Building 881 - Drum Storage Area
- IHSS 179, Building 865 - Drum Storage Area
- IHSS 180, Building 883 - Drum Storage Area
- IHSS 204, RCRA Unit 45, Building 447 - Original Uranium Chip Roaster
- IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area
- IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench-Scale Treatment

During April 1992, IHSS 215, Unit 55.13 - Tank T - 40, was deleted from OU 15 and added to OU 9 as part of an IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992. Also, IHSS 212, RCRA Unit 63, Building 374 Drum Storage Area, was removed from the OU 15 RFI/RI process because it is currently active as a Drum Storage Area and has been included in the Rocky Flats RCRA Part B Transuranic Mixed Waste permit application. The remaining six IHSSs currently have interim status under RCRA.

Closure Plans for the IHSSs were submitted to CDH during 1988 and 1989. The IHSSs were also included within the IAG. During scoping meetings in April 1992 for the Phase I RFI/RI Work Plan, EPA, CDH, and DOE agreed to combine the Closure Plan and RFI/RI processes. In effect, the Clean Closure Performance Standard (5 CCR 1007-3 Part 265.111) will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings for hazardous and toxic materials. For radiological contamination, the IHSSs will utilize CERCLA standards.

Drums containing solids and liquids were stored at four of the six remaining OU 15 IHSSs. Types of waste materials stored included oils, coolants, solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes), and waste paints and metals contaminated with solvents. Hazardous constituents include chlorinated solvents and beryllium. Radiological constituents included uranium. No known spills or releases have occurred. Characterization has been completed. While awaiting the final resolution of each building, the steps necessary to close the OU 15 IHSSs will be determined.

Scope of Work Changes This Period

With the approval of the regulatory agencies, Stage III field work (outside building sampling) was deleted and replaced with inside building verification sampling. There will be no cost or schedule impact to this change in scope.

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
Submit Final Phase I RFI/RI Work Plan	26 Oct 92

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	01 Aug 94		01 Aug 94
Submit Final Phase I RFI/RI Report	04 Jan 95		04 Jan 95

**June Work Activity
Status**

Verification Sampling was completed. Sample analysis is in process. Work continued on the Phase I RFI/RI Report. The Draft Phase I RFI/RI Report is due August 1, 1994.

Technical Memoranda**TM #1****TM Title****TM Status**

Field Sampling Plan

When preparation was concluded: 28 Feb 94

Projected date of submittal to EPA/CDH: 28 Feb 94

Actual date of submittal: 28 Feb 94

Date comments were received: preliminary 17 Mar 94
(formal 07 Apr 94 CDH, 04 May 94 EPA)

TM #2**TM Title****TM Status**

Human Health and Risk Assessment

When preparation is concluded or is estimated to be concluded:

Projected date of final submittal to EPA/CDH: To be determined - may not be necessary unless Stage III field work is performed.

Actual date of draft submittal: 28 Feb 94

Date comments were received: preliminary 17 Mar 94
(formal 07 Apr 94*)

Because no sampling will be performed outside (Stage III), TM #2 will not be required.

- Excluded formal comments from the EPA.

Planned Work for July

- Receive and evaluate analysis results from verification sampling.
- Complete the Draft Phase I RFI/ RI Report.

Problems

None

Open Items

Follow on activities required to close the IHSSs.

2.16 OU 16 - LOW-PRIORITY SITES

This assessment activity consists of preparing a No Action Justification Document for the following five IHSSs: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks (400 and 700 Areas), Nickel Carbonyl Disposal. The No Action Justification Document was approved by the regulatory agencies, and the Record of Decision process was initiated to close OU 16 as an OU at Rocky Flats.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft No Action Justification Document	04 Mar 92
	Submit Final No Action Justification Document	30 July 92
	Submit Revised Final No Action Justification Document	16 Oct 92
	Submit Draft Record of Decision	29 Apr 94

Future IAG Milestones Through FY95 None

June Work Activity Status The comments on the Draft Record of Decision for OU 16 due from CDH and EPA on June 10, 1994, are delinquent. A milestone on June 30, 1994, for the finalized Record of Decision will be jeopardized for each day that the comments remain delinquent. Finalization of the Record of Decision has been delayed until July 1994 because of the delay in receipt of comments.

Technical Memoranda None

Planned Work for July • Finalize the Record of Decision upon receipt of comments on the draft.

Problems Finalization of the Record of Decision has been delayed until July 1994 because of delays in receipt of comments from the regulatory agencies.

Open Items Finalization of the Record of Decision has been delayed until July 1994 because of delays in receipt of comments from the regulatory agencies.

2.17 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and activities required by the IAG and that apply to Rocky Flats environmental restoration activities in general. Activities include, but are not limited to, the Health Safety Plan, Sampling and Analysis Plan, Treatability Study deliverables, Background Study Plan, Groundwater Geochemistry, Risk Assessment, IA IM/IRA, hydrological characterization, Background Soils Study Plan, Decontamination Facilities, ER Waste handling facilities, groundwater monitoring, Decontamination and Decommissioning, and Program Management Support activities.

**Scope of Work Changes
This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone Accomplishments	Submit Draft Background Study Report (Water)	15 Dec 89
	Submit Draft Background Study Report (Soils)	15 Dec 89
	Submit Draft Community Survey Plan	23 Jan 90
	Submit Final Community Survey Plan	22 Mar 90
	Submit Draft Health and Safety Plan	15 Aug 90
	Submit Draft Quality Assurance Project Plan	29 Aug 90
	Submit Draft Standard Operating Procedures	29 Aug 90
	Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
	Submit Draft Treatability Study Plan	21 Sep 90
	Submit Draft Community Relations Plan	01 Nov 90
	Submit Final Health and Safety Plan	12 Nov 90
	Submit Revised Background Study Report	21 Dec 90
	Submit Final Community Relations Plan	22 Jan 91
	Submit Final Quality Assurance Project Plan	01 Mar 91
	Submit Final Standard Operating Procedures	01 Mar 91
	Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
	Submit Community Relations Plan Responsiveness Summary	21 Jun 91
	Submit Final Treatability Study Plan	03 Jun 91
	Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91

Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
Submit Final Plan for Prevention of Contaminant Dispersion and Responsiveness Summary	25 Nov 91
Submit Draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for Radionuclides Discharge Limits Plan	31 Jan 92
Submit Final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93
Submit Sitewide Annual Treatability Study	14 Mar 94
Draft IA IM/IRA Decision Document	23 Mar 94

**Future Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Sitewide Annual Treatability Study	14 Mar 95		14 Mar 95
Submit Draft IA IM/IRA Responsiveness Summary	02 Aug 94		02 Aug 94
Submit Draft Final IA IM/IRA Responsiveness Summary	23 Aug 94		23 Aug 94
Submit Final IA IM/IRA Decision Document	23 Aug 94		23 Aug 94

**June Work Activity
Status****Sitewide Activities****Sitewide Treatability Studies**

Magnetic Separation Treatability Study - Operations at Los Alamos National Laboratory's TA-55 facility continue to be shut down because of concerns regarding compliance with Operational Safety Requirements for the fire suppression system. Negative schedule impacts are anticipated from the shutdown.

Plasma Melter Treatability Study - The subcontractor has given permission to release the plutonium volatilization test to DOE and EG&G. This test evaluates the effectiveness of the plasma melter on Rocky Flats' soil. DOE received this report on June 10, 1994.

Adsorption Process Treatability Study - Four samples were run to provide additional data under the batch section of the study. These tests are complete, and the samples have been forwarded to the subcontractor for analysis. Data analysis has been started on the balance of the samples with the data plotted to study adsorption

behavior. It appears that four of the six adsorbents were successful in adsorbing uranium from contaminated groundwater. A final decision on the optimum adsorbent(s) for use in groundwater remediation will be made as soon as the data analysis is complete. The draft final report is being worked on in accordance with the Guide for Conducting Treatability Studies Under CERCLA.

Potassium Ferrate Process (TRU/Clear®) - Five groundwater sources have been sampled to reflect plutonium, americium, uranium, and a suite of base metals for testing. The sampling has been completed. The samples will be transported to the Treatability Study Laboratory when testing begins.

Ion Exchange Process Treatability Study - Additional resins that were recommended by a subcontractor review have been ordered; a few have been received. Three of the resins suggested by the subcontractor have been determined to be appropriate for study because of their potential ability to remove uranium and selenium. Trial groundwater, containing uranium and selenium, has been collected from Rocky Flats groundwater wells and delivered to the Treatability Study Laboratory. These waters will be mixed in proportions which will be determined as soon as preliminary analyses establish uranium and selenium levels.

Other Sitewide Operations

Administrative Record - DOE received the Quarterly Status Report on ER Research Library and Documentation Services operations and Records Management operations on June 22, 1994.

Quality Assurance - DOE received the Quarterly Status Report on ER Quality Assurance operations on June 30, 1994.

Decontamination and Decommissioning - The Decontamination and Decommissioning Subproject Technical, Schedule and Cost Baselines were completed. DOE received the documents on June 14, 1994.

The Accelerated Decontamination and Decommissioning Project Plan was received on June 8, 1994.

A status report on the Decontamination and Decommissioning Project Management Plan, formerly called the Decontamination and Decommissioning

Project Guidance Document, was received by DOE on June 30, 1994. A draft of the Decontamination and Decommissioning Project Management Plan is scheduled for August 1994.

Surface Water Management - An Onsite Water Control quarterly progress report for drainage repairs and improvement activities was received by DOE on June 6, 1994.

Because of increased funding requirements for both the awards of the construction contract and the power installation at the gaging stations, the environmental monitoring station project cannot be completed with existing resources. DOE met with EG&G on June 8, 1994, to discuss the construction contract and several proposed alternatives. DOE is considering transferring the funding, internalizing the project, and granting the U. S. Geological Survey the funds to construct similar monitoring stations instead of the currently designed facilities. All work on the project was suspended effective June 15, 1994, pending a decision on a course of action.

The City of Lakewood is requesting the purchase of water rights in addition to the wetland construction. This request is causing concerns over the wetland mitigation activity. Original plans to construct a wetland at Bear Creek Reservoir have been re-evaluated, and alternative projects with the U. S. Fish and Wildlife Service are being considered by DOE. Construction of the monitoring stations will not commence until a letter of intent for a wetland construction project is agreed to by all concerned parties.

Industrial Area Interim Measure/Interim Remedial Action Plan - The IAG milestones for this project will be missed because of an increase in scope. The regulatory agencies have indicated that an extension is appropriate and should be granted. A letter requesting an extension on this milestone is being composed.

A change order was issued to allow the subcontractor to proceed on the revised scope of work and continue the comment response to the Draft Decision Document.

Community Relations

ER Quarterly Public Meeting - The ER Quarterly Public Meeting was held on June 22, 1994, with presentations given by the regulatory agencies and DOE. DOE gave a presentation that discussed the accelerated approach to clean up, streamlining similar processes (e.g., one RFI/RI process as opposed to three processes for a particular OU). IHSS regrouping to determine No Further Actions and early actions were also discussed. A presentation on Risk Assessment was given.

Planned Work for July

- Continue work on a draft of the Decontamination and Decommissioning Project Management Plan.
- Continue to work towards an extension date for the IA IM/IRA.
- Continue normal Community Relations activities.
- Continue normal Administrative Record activities.

Problem

None

Open Items

None

SECTION 3.0 ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDH upon request from the Environmental Management Department and EG&G Rocky Flats, Inc. The schedules are lengthy; therefore, they are not reproduced here. An EPA or State-authorized representative may make arrangements to observe field work and to obtain split or duplicate samples.

3.1 SURFACE WATER AND SEDIMENTS

Each of the Surface Water Stations (approximately 20 stations) is sampled quarterly.

Each of the Sediment Stations (approximately 10 stations) is sampled quarterly.

Each surface water and sediment sample is analyzed for the following parameters:

- Contract Laboratory Program Target Compound List Volatile Organic Analysis
- Metals Contract Laboratory Program Target Analysis List and Non-Target Analysis List
- Field Parameters
- Specific Conductivity
- Dissolved Oxygen
- Major Anions
- Radionuclides
- Temperature
- Total Dissolved Solids/Total Suspended Solids
- pH
- Nutrients

Additionally, sediment samples are analyzed for Contract Laboratory Program -Semi Volatile Organic Analysis and Contract Laboratory Program -Pesticides/polychlorinated biphenyls Herbicides-619.

3.2 SOILS

Each of the soil stations (located at 1- and 2-mile radii from the plant center) is sampled annually.

Each soil sample is analyzed for plutonium and americium.

3.3 GROUNDWATER

A total of 380 groundwater stations is sampled quarterly. This includes RCRA, CERCLA, plant protection, and boundary wells. All wells are monitored quarterly for water levels, and

approximately one-third of the wells is monitored monthly for water levels. Each groundwater sample is analyzed for the following parameters:

<u>Radiochemical Parameters</u>	<u>Inorganic Parameters</u>	<u>Field Parameters</u>
Gross Alpha	Nitrate/Nitrite	Specific Conductivity
Gross Beta	Total Phosphorous	Temperature
Plutonium	Ortho-Phosphate	Turbidity
Americium	Ammonia	pH
Strontium	Total Dissolved Solids	
Tritium	Chlorine	
Uranium	Fluorine	
Cesium	Sulfate	
	Carbonate	
	Bicarbonate	
	Total Suspended Solids	
	Dissolved Contract Laboratory Program and additional metals	
	Cyanide	
	Contract Laboratory Program Volatile Organic Constituents	

SECTION 4. SUBCONTRACTOR IDENTIFICATION

Subcontractors being used on the Rocky Flats ER Program and the work they are performing are identified on the following list as required by Paragraph 13 of the IAG.

OU	Project	Subcontractor	Subcontractor	Work Description	Start Date
1	Assessment	Dames & Moore		CMS/FS Report	Jan 92
1	Assessment	Dames & Moore		Public Health Evaluation	Apr 93
1	Assessment	Roy F. Weston		Revise RI Report, respond to agency comments	Feb 93
1	Assessment	S. M. Stoller		Environmental Evaluation	Apr 93
1	Remediation	Resource Tech.		B-891 Treatment System Operations Group, Inc. (RTG)	
2	Assessment	Woodward-Clyde		OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Sep 90
2	Assessment	Woodward-Clyde	Layne	OU 2 RFI/RI Work Plan (bedrock), surficial soils	Mar 93
2	Remediation	RTG		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Jan 91
2	Soil Vapor Extraction	Woodward-Clyde		Operation of Soil Vapor Extraction	1993
3	Assessment	IT Corporation	CH2M Hill	OU 3 Field Work and RI Report	Apr 92
3	Assessment	MRI		Wind Tunnel/Soil Resuspension Study	Aug 92
4	Remediation	HNUS	Haliburton Spec	Demobilize	Sep 91
4	Assessment	Parsons/Eng Science	Rust I&E	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92
4	Remediation	Parsons/ Eng Science		Development of IM/IRA Decision Document and conceptual design	
4	Remediation	ERM-Rocky Mountain	Geraghty & Miller	Post-closure monitoring plan	Nov 93

<u>OU</u>	<u>Project</u>	<u>Sub-Subcontractor</u>	<u>Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
5	Assessment	ASI Blackhawk Geo Walsh & Assoc. Layne Envir. Service S. M. Stoller Adv. Terra Testing	Dames & Moore Utility Mgmt. Service	Implementation of OU 5 Work Plan (excluding EE)	Jun 92
5	Assessment	S. M. Stoller		Implementation of Environmental Evaluation section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward-Clyde	Lane, Ogden, Geo Envir	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	Aug 92
6	Assessment	S. M. Stoller		Implementation of EE section of OU 6 Work Plan	Sep 92
7	Assessment	S. M. Stoller	Walsh & Assoc.	OU 7 revised Work Plan develop- ment and implementation. IMIRA Decision Document development.	Nov 92
8	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
9	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
10	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
11	Assessment	S. M. Stoller		Implement the RFI field work and report writing	Jan 94
12	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
13	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
14	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
15	Assessment	ERM-Rocky Mtn.	G.S. Miller, Inc.	Implementation of the RFI/RI Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91

Subcontractor Identification

<u>OU</u>	<u>Project</u>	<u>Sub-Subcontractor</u>	<u>Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct 90
SW	Geo. Char.	Jacobs Eng.		Well Abandonment and Replacement	Mar 93
SW	Geo. Char. University	Colorado State		Support master's thesis of Structural Geology, of Front Range Area Near Rocky Flats	Nov 91
SW	Geo. Char.	S. M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93
SW	Geo. Char.	Colorado School of Mines		Masters-level training program in Engineering Science and Engineering	Aug 92
SW	Geo. Char.	Woodward-Clyde		Support for the Soil Water Monitoring System	Feb 93
SW	Geo. Char.	Colorado State University		Sequential Extraction	April 92
SW	Geo. Char.	University of Colorado		Soil Monitoring Vadose Zone	Jun 92
SW	Geo. Char.	S. M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward Clyde	SAIC/Wright Water		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for groundwater, surface water, and sediment	Jul 90
SW	QA	SAIC		Develop and implement QA program and field operations oversight	Dec 90
PM	Support	S. M. Stoller		Program Management Support	Oct 92
PM	QA Support	SAIC		Provide QA/QC support to ER Program	Nov 92

ACRONYMS

CDH	Colorado Department of Health
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CMS	Corrective Measures Study
DOE	U. S. Department of Energy
EPA	U. S. Environmental Protection Agency
EQS	Environmental Quality Support
ER	Environmental Restoration
FY	Fiscal Year
IA	Industrial Area
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
OU	Operable Unit
RFFO	Rocky Flats Field Office
RFI	Remedial Facilities Investigation
RI	Remedial Investigation
TM	Technical Memorandum